Appendices

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APPENDIX A

ENVIRONMENTAL REGULATIONS AND PERMIT REQUIREMENTS

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ENVIRONMENTAL REGULATIONS AND PERMIT REQUIREMENTS

Many biological resources in California are protected by Federal and State laws and regulations. During the project planning and pre-implementation process, surveys and other assessments may be needed to determine site sensitivities and compliance measures to minimize environmental impacts or effects on protected resources. Key environmental regulatory requirements and permits applicable to implementation of the General Plan are discussed below.

FEDERAL REGULATIONS

Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA), the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) have authority over projects that may result in take of a federally listed species. Under the ESA, the definition of "take" is to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." USFWS has also interpreted the definition of "harm" to include significant habitat modification that could result in take. If a project has a reasonable likelihood that it would result in take of a federally listed species, either one of two take approvals is required: an incidental take permit, under Section 10(a) of the ESA (if no other federal action is involved), or a federal interagency consultation and Biological Opinion, under Section 7 of the ESA (if another federal approval is needed).

The recreation facilities improvements and recreation activities discussed in this report have the potential to affect federally listed threatened or endangered, and candidate or proposed species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, implements a series of treaties that provide international migratory bird protection, and authorize the Secretary of the Interior to regulate the taking of migratory birds. The MBTA states it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill…any migratory bird, or any part, nest or egg of any such bird, included in the terms of conventions" with certain other countries (16 U.S. Code [USC] 703). The current list of species protected by the MBTA contains several hundred species and essentially includes all native birds. Section 3513 of the California Fish and Game Code provides for adoption of the MBTA's provisions. Although neither the MBTA nor this state code offers statutory or regulatory mechanisms for obtaining an incidental take permit for the loss of nongame migratory birds, a Section 10(a) permit issued under the ESA may constitute a special purpose permit for the take of a listed species that is also covered by the MBTA. Sometimes CDFG and USFWS seek measures that demonstrate avoidance of loss of MBTA-covered species. USFWS and CDFG have discretion whether or not to pursue an

MBTA action, if some migratory birds would be lost, but have decided not to pursue action when agencies demonstrate that all reasonable loss avoidance measures have been incorporated into a project.

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act (CWA) establishes a requirement to obtain a permit from USACE prior to initiating any activity that involves any discharge of dredged or fill material into "waters of the United States," including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Many surface waters and wetlands in California meet the criteria for waters of the United States, including intermittent streams and seasonal lakes and wetlands.

Pursuant to Section 404 of the CWA, the U.S. Army Corps of Engineers (USACE) regulates and issues permits for activities that involve the discharge of dredged or fill materials into waters of the United States. In addition, under Section 10 of the Rivers and Harbors Act, USACE issues permits for structures and/or work in or affecting navigable waters of the United States. Fills of less than ½ acre of non-tidal waters of the United States for residential, commercial, or institutional development projects can generally be authorized under the USACE's nationwide permit (NWP) program, provided the project satisfies the terms and conditions of the particular NWP. Fills that do not qualify for a NWP require a Letter of Permission of an individual permit.

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the Fish and Game Code, an incidental take permit from the California Department of Fish and Game (CDFG) is required for projects that could result in the take of a state-listed Threatened or Endangered species. Under CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species, but the definition does not include "harm" or "harass," as the federal act does. As a result, the threshold for a take under the CESA is higher than that under the ESA.

Section 401 of the Clean Water Act (CWA)

Section 401(a)(1) of the Clean Water Act (CWA) specifies that any applicant for a Federal license or permit to conduct any activity, including but not limited to the construction or operation of facilities that may result in any discharge into navigable waters, shall provide the federal licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable water at the point where the discharge originates or will originate, that any such discharge will comply with the applicable provisions of the Clean Water Act. Succinctly, this means that in California, the Regional Board must certify that the project will comply with water quality standards (defined below). In some instances, the need for certification may be waived if the action is shown to have minimal water quality effects.

Section 3503.5 of the California Fish and Game Code - Protection of Raptors

Section 3503.5 of the Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs. Violations include destruction of active raptor nests as a result of tree removal and disturbance to nesting pairs by nearby human activity that causes nest abandonment and reproductive failure.

Section 1600 of the California Fish and Game Code - Streambed Alteration Agreement

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake in California that supports wildlife resources and/or riparian vegetation are subject to regulation by CDFG, pursuant to §1600 through §1603 of the California Fish and Game Code. Under §1601 for public projects and §1603 for projects proposed by nonpublic entities, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake designated by CDFG, or use any material from the streambeds, without first notifying CDFG of such activity. Authorization from CDFG would be in the form of a Streambed Alteration Agreement.

APPENDIX B

FLORISTIC INVENTORY OF BIDWELL-SACRAMENTO RIVER STATE PARK

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FLORISTIC INVENTORY OF BIDWELL-SACRAMENTO RIVER STATE PARK

GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
FERNS AND ALLIES		
Azollaceae		
Azolla filiculoides	mosquito fern	CL, GB, IF, PC; floating or stranded on mud along sloughs, seasonally stranded on littoral zone of main river
Equisetaceae		
Equisetum arvense	common horsetail	CL, GB, PA, PC; moist soil of point bars, openings in woodland and willow scrub
Equisetum hyemale ssp. *affine*	common scouring rush	CL
Equsetum laevigatum	Smooth scouring rush	GB, PA; moist edges and openings in woodland, willow scrub
LICHENS[3]		
Parmeliaceae		
Evernia prunastri		
Flavopunctelia flaventior		
Melanelia subolivacea		
Parmelina quercina		

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Physciaceae		
Physcia adscendens		
Physcia stellaris		
Ramalinaceae		
Ramalina farinacea		
Ramalina leptocarpha		
Teloschistaceae		
Xanthoria fallax		
Xanthoria polycarpa		
DICOTS		
Aceraceae		
Acer negundo var. *californicum*	box elder	GB; frequent in riparian woodland
Acer saccharinum *	sugar maple	PC; Infrequent
Amaranthaceae		
Amaranthus albus *	tumble pigweed	CL, PA, PC; disturbed sites and gravel bar
Amaranthus blitoides	mat amaranth	CL, GB, IF, PA, PC; disturbed road and trail edges
Amaranthus californicus[1]	California amaranth	
Amaranthus deflexus *	Large-fruited amaranth	PA; infrequent
Amaranthus retroflexus *	redroot pigweed	GB, PA, PC; Infrequent

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Amaranthus rudis *	tall amaranth	GB, PA; this taxon is not in Jepson Manual; upper bank of Chico Creek
Anacardiaceae		
Toxicodendron diversilobum	poison oak	CL, GB, IF, PA, PC; frequent understory component and woodland edges, can climb vinelike into riparian canopy
Apiaceae		
Anthriscus caucalis *[1]	bur chervil	
Conium maculatum *	poison hemlock	CL, GB, IF, PA, PC; disturbed moist areas and understory in valley oak woodland
Daucus carota *	wild carrot, Queen Anne's-lace	GB, PA; infrequent in disturbed sites
Torilis arvensis *	hedge-parsley	CL, GB, IF, PA, PC; frequent in drier disturbed sites, part of ruderal grassland
Torilis nodosa[1]	knotted hedge-parsley	
Apocynaceae		
Vinca major *	periwinkle	PC, IF; noxious weed in valley oak woodland
Araliaceae		
Hedera helix *[1]	English ivy	Plants removed in 2001-2002
Aristolochiaceae		
Aristolochia californica	California pipevine	CL, GB, IF, PA, PC; frequent vine in riparian

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
		woodland
Asteraceae		
Ambrosia artemisifolia	annual ragweed	GB, PA; Infrequent on gravel bars
Ambrosia psilostachya	western ragweed	CL, GB, IF, PA, PC
Anthemis cotula *[1]	mayweed	
*Artemisia biennis**[3]	biennial sagewort	
Artemisia douglasiana	common mugwort	CL, GB, IF, PA, PC: frequent in all riparian habitats
Aster chilensis[1]	California aster	
Aster subulatus var. *ligulatus*	annual water-aster	CL, GB, PC; inconspicuous in moist sunny areas
Baccharis douglasii[1]	salt marsh baccharis	
Baccharis pilularis	coyote brush	CL, GB, IF, PA, PC
Baccharis salicifolia	mule-fat	PC
Bidens frondosa	sticktight	CL, GB, IF, PA, PC; frequent in littoral zone and shaded cottonwood forest
Centaurea solstitialis *	yellow star-thistle	CL, GB, IF, PA, PC; frequent in dry disturbed sites
Chamomilla suaveolens	pineapple weed	CL. GB; disturbed sites and occasional on gravel bars
Cichorium intybus *	chicory	CL, GB, IF, PA, PC; frequent in dry disturbed sites
Cirsium arvense *	Canada thistle	IF
Cirsium vulgare *	bull thistle	PA

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Conyza canadensis	Canada horseweed	CL, GB, PA; frequent in dry disturbed sites
Conyza floribunda *	many-flowered horseweed	CL, GB, PA, PC
Conyza sp.	horseweed	CL, GB, IF, PA, PC
Eclipta prostrata *	False daisy	CL, GB, PA; inconspicuous in moist sunny sites, littoral zone
Erigeron annuus *	annual daisy	CL, PC; Infrequent in moist sunny sites, littoral zone
Eriophyllum lanatum var. *grandiflorum*	large-flowered wooly-sunflower	CL; several scattered individuals on gravel bar
Euthamnia occidentalis	western goldenrod	CL, GB, IF, PA, PC; common on gravel bars and in willow scrub, moist disturbed road edges
Filago californica[1]	California filago	
Gnaphalium luteo-album *	weedy cudweed	CL, GB; sunny moist areas
Gnaphalium palustre	western marsh cudweed	CL, GB, PC
Grindelia camporum var. *camporum*	gumweed	CL
Hemizonia pungens	common spikeweed	CL
Heterotheca oregona	Oregon golden-aster	CL, GB, IF
Hypochaeris glabra *	smooth cat's ear	CL
Lactuca serriola *	prickly lettuce	CL, GB, IF, PA, PC
Picris echioides *	bristly ox-tongue	IF, PA
Rudbeckia hirta var. *pulcherrima* *[3]	black-eyed susan	

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Senecio vulgaris *	common groundsel, old-man-of-spring	CL, GB, IF, PA, PC; disturbed areas and occasional on gravel bars
Silybum marianum *	milk thistle	CL, GB, PC, IF;
Sonchus arvensis *[1]	perennial sow thistle	
Sonchus asper ssp. *asper* *	prickly sow thistle	CL, GB, PC;
Sonchus oleraceus *	sow thistle	IF
Taraxacum officinale *	dandelion	CL, GB, IF, PA, PC
Xanthium strumarium	cocklebur	CL, GB, IF, PA, PC; frequent in moist sunny sites
Betulaceae		
Alnus rhombifolia	white alder	CL, GB; infrequent on gravel bars
Bignoniaceae		
*Catalpa speciosa**	northern catalpa	PA, PC; Scattered individuals near upper banks of Chico Creek
Boraginaceae		
Heliotropum curassavicum	wild heliotrope	CL, GB, IF; disturbed sites and gravels bars
Plagiobothrys bracteatus	bracted popcorn-flower	CL; scattered individuals on moist sand on gravel bar
Brassicaceae		
Brassica nigra *	black mustard	IF;
Brassica rapa *[1]	field mustard	
Capsella bursa-pastoris *	shepherd's purse	IF; disturbed sites

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Cardamine oligosperma.	annual bittercress	CL, GB
Cardaria chalapensis *	lens-pod hoarycress	CL, PA, IF
Cardaria draba *[2]	hoary cress	Not known from Butte County
Coronopus didymus *	lesser swinecress	IF
Draba verna *	spring whitlow-grass	CL, GB: open sites on gravel bar
Hirschfeldia incana *	hoary mustard	CL, GB, IF, PA, PC
Lepidium latifolium *	perennial pepperweed	
Lepidium nitidum var. *nitidum*	shining pepper-grass	CL, GB
Raphanus raphanistrum *	jointed charlock	CL, GB, IF, PA, PC
Raphanus sativus *	wild radish	IF
Rorippa curvisiliqua var. *occidentalis*	western yellowcress	CL, GB
Calycanthaceae		
Calycanthus occidentalis[1]	spicebush	Planted at PA
Capparaceae		
Polanisia dodecandra ssp. *trachysperma*	Clammyweed	CL, GB, PA; occasional on gravel bar and road/levee embankment
Caprifoliaceae		
Sambucus mexicana	blue elderberry	CL, GB, IF, PA, PC
Caryophyllaceae		
Cerastium glomeratum	mouse-eared chickweed	

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Herniaria hirsuta ssp. *hirsuta*	gray herniaria	CL, GB
Petrorhagia dubia *	grass pink	CL, GB, IF
Spergularia bocconii	Boccone's sandspurry	
Spergularia rubra *	ruby sandspurry	CL, GB, PC, IF
Stellaria media *	common chickweed	IF
Stellaria nitens *	mouse-ear chickweed	GB
Chenopodiaceae		
Atriplex triangularis	spearscale	CL, PA
Chenopodium album *	white goosefoot, lamb's-quarters	CL, GB, IF, PA, PC
Chenopodium ambrosioides *	Mexican tea	CL, GB, PA, PC
Chenopodium botrys *	Jerusalem oak	CL, GB, IF
Chenopodium murale *[1]	nettle-leaved goosefoot	
Chenopodium strictim var. *glaucofolium* *	glaucus-leaved goosefoot	GB, PA
Cycloloma atriplicifolium *	winged pigweed	CL, GB; syn. *Atriplex atriplicifolium*
Kochia scoparia *[3]	common red sage	
Salsola tragus *	Russian-thistle	CL, GB, PA
Convolvulaceae		
Convolvulus arvensis	bindweed	CL, GB, IF, PA, PC

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Crassulaceae		
Crassula sp.	pygmyweed	CL, GB
Curcurbitaceae		
Cucurbita pepo *	field pumpkin	PA
Marah fabaceus	California manroot	CL, GB, IF, PA, PC
Dipsacaceae		
Scabiosa atropurpurea[3]*	pincushion plant	
Elatinaceae		
Bergia texana[3]	Texas bergia	
Euphorbiaceae		
Chamaesyce maculata *	spotted spurge	CL
Chamaesyce serpyllifolia ssp. *serpyllifolia*	thyme-leaved spurge	CL, GB, PA
Eremocarpus setigerus	doveweed, turkey-mullein	CL, GB, IF, PA, PC
Euphorbia peplus *	petty spurge	CL
Fabaceae		
Albizia julibrissin *	silktree	PC
Hoita macrostachya	leather root	
Lathyrus jepsonii var. *californicus*	California pea	IF, PC
Lotus corniculatus	bird's foot trefoil	
Lotus micranthus	small-flowered lotus	

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Lotus purshianus	Chile-lotus	CL, IF, GB, PC
Lupinus spp.	lupines	
Medicago polymorpha *	common bur-clover	CL, GB, IF, PA, PC
Medicago praecox *	Mediterranean bur-clover	CL
Melilotus alba *	white sweet-clover	CL, GB, IF, PA, PC
Melilotus indica *	sour-clover	
*Robinia pseudoacacia**	black locust	PC
Trifolium dubium *	rose clover	CL, GB, IF
Trifolium variegatum	white-tipped clover	
Sesbania punicea[1,3]*	Sesbania	Invasive weed
Vicia villosa *	hairy vetch	CL, GB, IF, PC
Fagaceae		
Quercus lobata	valley oak	CL, GB, IF, PA, PC
Quercus wislizenii	interior live oak	
Gentianaceae		
Centaurium muehlenbergii	June centaury	CL, PA, PC
Geraniaceae		
Erodium botrys	long-beaked filaree	
Erodium cicutarium *	red-stemmed filaree	

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Geranium molle *	dove's-foot geranium	CL, IF, PC
Geranium dissectum *	cut-leaved geranium	GB
Haloragaceae		
Myriophyllum sp.	water milfoil	IF
Hydrocharitaceae		
Elodea canadensis	Canadian waterweed	CL, IF, PC
Hypericaceae		
Hypericum perforatum *	Klamathweed	CL, IF, PA
Juglandaceae		
Carya illinoinensis	pecan	
Juglans californica varieties*	California black walnut (orchard rootstock or hybrids)	CL, GB, IF, PA, PC; (Varieties *californica*, *hindsii*, *californica* x *hindsii* hybrids, and/or hybrids with *J. regia*. Identification unclear)
Juglans regia	English walnut	GB, PC
Lamiaceae		
Lamium amplexicaule *	henbit	IF, PC
Lycopus americanus	cut-leaved bugle-weed	CL, GB, PC
Marrubium vulgare *	horehound	CL, GB, IF, PA, PC
Melissa officinalis *	bee-balm	PC
Mentha arvensis	wild mint	PC
Mentha pulegium *	pennyroyal	PC, CL

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Mentha sp.	mint	
Trichostema lanceolatum	vinegar-weed	CL, GB
Loasaceae		
Mentzelia laevicaulis	blazing star	CL, GB
Lythraceae		
Ammannia coccinea[3]	purple ammannia	
Ammannia robusta[3]	grand ammannia	
Lythrum hyssopifolium *	hyssop loosestrife	CL, GB, PA, PC
Rotala indica *	Indian toothcup	CL
Rotala ramosior[3]	lowland rotala	
Malvaceae		
Abutilon theophrasti *	velvetleaf	PA, GB
Hibiscus lasiocarpus[1]	rose-mallow	Planted at PA
Malva nicaeensis *	bull mallow	IF, PC
Malva parviflora	cheeseweed	CL, PC
Molluginaceae		
Mollugo verticillata *	Indian-chickweed	CL, GB, PC
Moraceae		
Ficus carica *	edible fig	CL, GB, IF, PC
Maclura pomifera	osage-orange	

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Morus alba *	white mulberry	GB, PC
Myrtaceae		
*Eucalyptus camaldulensis**	red gum	
Eucalyptus sp.*	eucalyptus	
Oleaceae		
Fraxinus latifolia	Oregon ash	CL, GB, IF, PA, PC
Onagraceae		
Epilobium brachycarpum	panicle willow-herb	CL, GB, IF, PA, PC
Epilobium ciliatum ssp. *ciliatum*	fringed willow-herb	
Epilobium densiflorum[3]	dense-flowered willow-herb	
Ludwigia peploides ssp. *montevidensis* *	Montevideo waterweed	CL, GB, IF, PA, PC; emergent and littoral mud; forms dense impenetrable mats
Ludwigia peploides ssp. *peploides*	floating water-primrose	
Oenothera elata ssp. *hirsutissima*	hairy evening primrose	PA
Orobanchaceae		
Orobanche vallicola	valley broom-rape	CL; one single plant observed under blue elderberry next to old boat ramp
Oxalidaceae		
Oxalis corniculata *	creeping wood-sorrel	GB
Phytolaccaceae		
Phytolacca americana *	pokeweed	CL, GB, IF, PA, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Plantaginaceae		
Plantago lanceolata *	English plantain	CL, GB, PA, PC
Plantago major *	common plantain	GB
Platanaceae		
Platanus racemosa	California sycamore	CL, GB, IF, PA, PC
*Platanus x acerifolia**	London plane tree	
Polygonaceae		
Polygonum arenastrum *	common knotweed	CL, GB, IF, PA, PC
Polygonum hydropiperoides	mild water-pepper	CL, PA, PC, GB; emergent along Chico Creek,
Polygonum lapathifolium	willow-weed	CL, GB, PA, PC
Polygonum persicaria	lady's thumb	CL, GB, IF, PA, PC
Polygonum punctatum	punctate smartweed	
Rumex acetosella *	sheep sorrel	IF
Rumex conglomeratus	sharp dock	
Rumex crispus *	curly dock	CL, GB, IF, PA, PC
Rumex pulcher *	fiddle dock	CL, GB, IF, PA, PC
Portulacaceae		
Claytonia perfoliata	miner's lettuce	CL, GB, IF, PA, PC
Portulaca oleracea *	common purslane	GB, PA

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Primulaceae		
Anagallis arvensis	scarlet pimpernel	
Ranunculaceae		
Clematis ligusticifolia	virgin's bower	CL, GB, IF, PA, PC
Clematis pauciflora	few-flowered clematis	
Ranunculus aquatilis	water buttercup	CL, GB, IF, PC
Rhamnaceae		
Rhamnus tomentella ssp. *tomentella*	hoary coffeeberry	IF
Rosaceae		
Heteromeles arbutifolia	toyon	CL
Prunus cerastifera	cherry plum	CL
Prunus dulcis *	almond	CL, IF, PA, PC
Prunus persica	peach	
Prunus sp.*	prune orchard rootstock	GB
*Pyrus communis**[3]	pear	
Rosa californica	California wild rose	CL, IF, PA, PC
Rosa sp. *	rose	
Rubus discolor *	Himalayan blackberry	CL, GB, IF, PA, PC
Rubus leucodermis	white-bark raspberry	
Rubus ursinus	California blackberry	CL, GB, IF, PA, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Rubiaceae		
Cephalanthus occidentalis var. *californicus*	California buttonbush	CL, GB, IF, PA, PC
Galium aparine *	common bedstraw	CL, GB, IF, PA, PC
Galium parisiense *	bedstraw	IF
Salicaceae		
Populus fremontii ssp. *fremontii*	Fremont cottonwood	CL, GB, IF, PA, PC
Salix exigua	sandbar willow	CL, GB, IF, PA, PC
Salix gooddingii	Goodding's black willow	CL, GB, IF, PA, PC
Salix laevigata	red willow	CL, GB, IF, PA, PC
Salix lasiolepis	arroyo willow	CL, GB, IF, PA, PC
Salix lucida ssp. *lasiandra*	shining willow	CL, PC
Salix melanopsis	dusky willow	CL, GB
Scrophulariaceae		
Antirrhinum cornutum[3]	spurred snapdragon	
Castilleja attenuata	valley-tassels	CL
*Kickxia elatine**	sharp-leaved fluellin	CL, GB, IF, PA, PC
Lindernia dubia var. *anagallidae*	false pimpernel	CL, GB, PA, PC
Mimulus glaucescens	shield-bracted monkeyflower	CL
Mimulus guttatus	seep monkeyflower	CL, GB
Mimulus pilosus	downy mimetanthe	CL, GB

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Verbascum blattaria *	moth mullein	CL, GB, IF, PA, PC
Verbascum thapsus *	woolly mullein	CL, GB, PA
Veronica anagallis-aquatica	water speedwell	CL, GB
Veronica peregrina ssp. *xalapensis*	purselane speedwell	CL, GB
Simaroubaceae		
*Ailanthus altissima**	tree-of-heaven	
Solanaceae		
Datura ferox	Chinese thornapple	CL, GB, PA
Datura stramonium var. *tatula*	purple-stemmed jimson-weed	CL, PA
Nicotiana acuminata var. *multiflora*	Many-flowered tobacco	CL, GB, IF
Physalis lanceifolia	lanceleaf groundcherry	
Physalis philadelphica *	tomatillo	PA
Solanum americanum	American nightshade	CL, GB, PA
Solanum nigrum[1]	black nightshade	Not known from Butte County
Tamaricaceae		
*Tamarix parviflora**	tamarisk	
Ulmaceae		
Celtis sp.*	hackberry	PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Urticaceae		
Urtica dioica ssp. *holosericea*	hoary creek nettle, stinging nettle	CL, GB, IF, PA, PC
Urtica urens	burning nettle	GB
Verbenaceae		
Phyla lanceolata	lance-leaf lippia	
Phyla nodiflora var. *nodiflora*	creeping lippia	GB, IF, PA, PC
Phyla nodiflora var. *rosea*	matted tribe	
Verbena bonariensis *	South American vervain	CL, PA
Verbena littoralis	shore vervain	CL, GB, IF, PA, PC
Violaceae		
Viola sp. *	violet	GB, IF, PC
Viscaceae		
Phoradendron macrophyllum	big-leaved mistletoe	CL, PC; on Fremont's cottonwood
Vitaceae		
*Parthenocissus cinquefolia**[2]	Virginia creeper	This is not known from Butte County
Vitis californica	California wild grape	CL, GB, IF, PA, PC
Zygophyllaceae		
Tribulus terrestris *	puncture vine	GB, PA, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
MONOCOTS		
Alismataceae		
Sagittaria latifolia	broad-leaf arrowhead	
Sagittaria longiloba	long-lobed arrowhead	
Araceae		
Arum italicum *	Italian arum	CL, GB
Cyperaceae		
Carex barbarae	Santa Barbara sedge, valley sedge	CL, GB, IF, PA, PC
Cyperus bipartitus	Two-parted cyperus	GB
Cyperus difformis *	Small-flowered cyperus	CL, PC
Cyperus eragrostis	tall flatsedge, tall cyperus	CL, GB, IF, PA, PC
Cyperus erythrorhizos[3]	red-rooted cyperus	
Cyperus esculentus	yellow nutsedge	CL, GB, IF, PA, PC
Cyperus niger	black cyperus	CL, GB, PC
Cyperus squarrosus	awned cyperus	
Cyperus strigosus	false nutsedge	
Eleocharis acicularis var. *acicularis*	needle spike-rush	CL
Eleocharis coloradoensis[3]	spike-rush	
Eleocharis macrostachya	common spike-rush	CL, GB, PC

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Eleocharis radicans[3]	creeping spike-rush	
Eleocharis sp.	spike-rush	GB, CL, PC
Fimbristylis autumnalis*[3]	fimbristylis	
Lipocarpha micrantha	small-flowered lipocarpha	CL, PC
Scirpus acutus var. *occidentalis*	common tule	CL, GB, IF, PA, PC
Scirpus americanus[2]	common three-square	not known from Butte County
Scirpus californicus[2]	California bulrush	not known from Butte County
Scirpus fluviatilis[1]	river bulrush	
Scirpus mucronatus[1]	bog bulrush	
Scirpus robustus[2]	big bulrush	not known from Butte County
Iridaceae		
Iris sp. *	iris	PC
Juncaceae		
Juncus acuminatus	sharp-fruited rush	
Juncus balticus	Baltic rush	CL
Juncus bufonius	toad rush	CL, GB, PA, PC
Juncus effusus var. *pacificus*	Pacific rush	CL, GB, PA
Juncus patens	spreading rush	
Lemnaceae		
Lemna sp.	common duckweed	CL, GB, IF, PC; Likely to be *L. minuta*

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Liliaceae		
Asparagus officinalis *	garden asparagus	CL, PC
Smilax californica	California greenbriar	CL
Poaceae		
Agrostis avenacea[1]	Aven's bentgrass	
Agrostis exarata[1]	spiked bentgrass	
Alopecurus aequalis	short-awned foxtail	CL
Arundo donax *	giant reed	GB
Avena fatua *	wild oats	CL, GB, IF, PA, PC
Bromus catharticus *	rescue grass	IF, PA, PC
Bromus diandrus *	ripgut brome	CL, GB, IF, PA, PC
Bromus hordeaceus *	soft chess	CL, GB, IF, PA, PC
Chloris virgata *	silky chloris	CL, GB, PA, PC
Cynodon dactylon *	Bermuda grass	CL, GB, IF, PA, PC
Cynosurus echinatus *	hedgehog dogtail-grass	CL, GB, IF, PA, PC
Cortaderia selloana *[1]	pampas grass	Plants removed in 2001-2002
Crypsis schoenoides *	swamp pricklegrass	GB
Dactylis glomerata *	orchardgrass	IF
Deschampsia danthonioides	annual hairgrass	GB, IF
Digitaria sanguinalis *	hairy crabgrass	GB, PC

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Echinochloa colona	jungle-rice	CL, PA
Echinochloa crus-galli	barnyard grass	IF, GB, PA, PC
Elymus glaucus ssp. *glaucus*	blue wild-rye	CL, GB, IF, PA, PC
Elytrigia repens *	quackgrass	
Eragrostis mexicana ssp. *virescens*	Green lovegrass	CL, GB, PA, PC
Eragrostis pectinacea var. *pectinacea*	purple lovegrass	CL, GB, PA
Gastridium ventricosum	nitgrass	CL, GB
Hordeum jubatum[1]	squirreltail barley	
Hordeum marinum ssp. *gussoneanum* *	Mediterranean barley	IF, PC
Hordeum murinum ssp. *leporinum* *	barley	CL, GB, IF, PA, PC
Leptochloa fascicularis	bearded sprangletop	CL, IF, GB, PA
Leptochloa uninerva	Mexican sprangletop	PA
Leymus triticoides	creeping wild-rye	CL, IF, PA
Lolium multiflorum *	Italian rye-grass	CL, GB, IF, PA, PC
Muhlenbergia rigens	deergrass	PA
Panicum capillare	witchgrass	CL, GB
Panicum dichotomiflorum	smooth witchgrass	GB
Paspalum dilatatum *	dallisgrass	CL, GB, IF, PA, PC
Paspalum distichum	knotgrass	IF, GB; slough margin, infrequent
Phalaris aquatica *	Canary-grass	IF

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GROUP Family *Scientific Name*	Common Name(s)	Comments (Observed by J. Dittes in 2003)
Piptatherum miliaceum *	smilograss	CL, GB, IF, PA, PC
Poa annua *	annual bluegrass	CL, GB, IF, PA, PC
Poa pratensis	Kentucky bluegrass	
Polypogon monspeliensis *	rabbit's-foot grass, annual beardgrass	CL, GB, PC
Setaria pumila *	yellow bristlegrass	CL, GB, PA, PC
Sorghum halepense *	Johnson grass	CL, GB, IF, PA, PC
Vulpia myuros var. *myuros* *	rattail fescue	CL
Potamogetonaceae		
Potamogeton crispus *	crispate-leaved pondweed	CL, GB, IF, PA, PC
Potamogeton nodosus	long-leaved pondweed	
Typhaceae		
Typha angustifolia	narrowleaf cattail	CL, GB, IF, PA, PC
Typha latifolia	broadleaf cattail	CL, GB, IF, PC
Sources: GIC 1998a; 1998b; 2003; Sacramento River Partners 2000; Elliott, pers. comm. 2003; Dempsey, pers. comm. 2003; Dittes and Guardino Consulting 2003		

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APPENDIX C

CHICO STATE UNIVERSITY HERBARIUM (CHSC) DATABASE QUERY RESULTS FOR BIDWELL-SACRAMENTO RIVER STATE PARK

Appendix C
Chico State University
Herbarium Database Query Results
for Bidwell-Sacramento State Park

Acc. No.	Division	Family	Genus	Epithet	Rank	Infraspecific	Collector	More Collectors	Coll'n No	Date	County	T-R-S	Elev.	Elev Units	Locality
47964	Anthophyta (flowering plants)	Amaranthaceae	Amaranthus	deflexus			Vernon Oswald		1062	10/10/1983	Butte				Bidwell State Park on the e side of the Sacramento R. w of Chico. The Indian Fishery at the jct. Of W. Sacramento Ave & River Rd.
43782	Anthophyta (flowering plants)	Araceae	Arum	italicum			Vernon Oswald		2369	5/4/1987	Butte	T22N R01W S35	135	ft.	Bidwell River State Park near the boat ramp just n of the Washout.
47851	Anthophyta (flowering plants)	Asteraceae	Artemisia	biennis			Vernon H. Oswald		4030	12/6/1989	Butte	T22N R01W S22 SE1/4 of NW1/4	140	ft.	Arroyo Chico. Pine Creek Landing Site of Bidwell River Park, west of Chico.
21059	Anthophyta (flowering plants)	Asteraceae	Baccharis	pilularis			M. S. Taylor		948	10/3/1975	Butte		120	ft.	On Sacramento River, ca. 1/2 mi N of washout on River Rd, ca. 10 mi W of Chico.
28424	Anthophyta (flowering plants)	Asteraceae	Bidens	frondosa			M. S. Taylor		2208	10/2/1979	Butte		100	ft.	Sacramento River at Chico Landing, ca. 5 mi W of Chico.
28743	Anthophyta (flowering plants)	Asteraceae	Eclipta	prostrata			R. A. Schlising		3511	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
28422	Anthophyta (flowering plants)	Asteraceae	Euthamia	occidentalis			M. S. Taylor		2215	10/2/1979	Butte		100	ft.	On sandbar in Sacramento River, at Chico Landing, ca. 5 mi w of Chico.
28621	Anthophyta (flowering plants)	Asteraceae	Gnaphalium	palustre			M. S. Taylor		2211	10/2/1979	Butte		100	ft.	On Sacramento River, at Chico Landing, ca. 5 mi w of Chico.
29803	Anthophyta (flowering plants)	Asteraceae	Heterotheca	oregona	var.	compacta	M. S. Taylor		2210	10/2/1979	Butte		100	ft.	Sacramento River, at Chico Landing, off River Rd, ca. 5 mi w of Chico.
43631	Anthophyta (flowering plants)	Asteraceae	Rudbeckia	hirta	var.	pulcherrima	Vernon Oswald		3003	6/17/1987	Glenn	T21N R01W S	125	ft.	West side of Sacramento River opposite the Washout (site of Chico Landing).
34565	Anthophyta (flowering plants)	Brassicaceae	Raphanus	raphanistrum			R. E. Preston	L. E. Preston	157	1/1/1982	Butte	T22N R01W S35			In almond orchard, e side of River Rd. ca. 1 mi s of Sacramento Ave.; Chico Landing site, ca. 5 mi w of Chico.
48287	Anthophyta (flowering plants)	Chenopodiaceae	Atriplex	triangularis			Vernon Oswald		1077	10/10/1983	Butte				Indian Fishery, Bidwell River State Park w of Chico at the jct. of W. Sacramento Ave. & River Rd.
21254	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	ambrosioides			M. S. Taylor		933	10/3/1975	Butte		120	ft.	Abundant ca. 1/4 mi n of the washout, between River Rd and the Sacramento River, ca. 10 mi w of Chico.
28484	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	atriplicifolium			R. Schlising		3497	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico. Just n of Chico Landing Site in Bidwlel River State Park.
34193	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	botrys			R. A. Schlising		3510	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico. Just n of Chico Landing Site in Bidwell River State Park.
34200	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	ambrosioides	var.	ambrosioides	J. D. Jokerst		1490 B	9/26/1981	Butte				Locally abundant in dry sand bars adjacent to and E of Sacramento River at the Bidwell River State Park (Chico Landing) ca. 5.0 mi W of Chico.
48291	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium	ambrosioides			Vernon Oswald		913	7/25/1983	Butte				River Road at the washout w of Chico.

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69681	Anthophyta (flowering plants)	Chenopodiaceae	Chenopodium				Vernon Oswald		3171	7/30/1987	Butte	T22N R01W S	120	ft.	Ranch Arroyo Chico. On the edge of the Sacramento River just upstream from the washout (Chico Landing site).
45267	Anthophyta (flowering plants)	Chenopodiaceae	Kochia	scoparia			Vernon Oswald		3702	9/21/1988	Butte	T22N R01W S	135	ft.	Ranch Arroyo Chico. Pine Creek Landing, Bidwell River Park, w of Chico.
13717	Anthophyta (flowering plants)	Chenopodiaceae	Salsola	tragus			M. S. Taylor		332	10/11/1974	Butte				Abundant in weed field, ca. 50 ft e of River Rd, opposite washout on Sacramento River, ca. 10 mi w of Chico.
30916	Anthophyta (flowering plants)	Chenopodiaceae	Salsola	tragus			M. S. Taylor		2207	10/2/1979	Butte		100	ft.	Sacramento River at Chico Landing, off River Road, ca. 5 mi w of Chico.
21134	Anthophyta (flowering plants)	Cyperaceae	Cyperus	erythrorhizos			M. S. Taylor		940	10/3/1975	Butte		120	ft.	Sandbar on Sacramento River, ca. 10 mi w of Chico. Bidwell River State Park at Chico Landing.
34197	Anthophyta (flowering plants)	Cyperaceae	Cyperus	strigosus			J. D. Jokerst	L. Ahart	1494	9/26/1981	Butte				Swale ca 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34198	Anthophyta (flowering plants)	Cyperaceae	Cyperus	difformis			J. D. Jokerst	L. Ahart	1492	9/26/1981	Butte				Moist swale ca 110 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34199	Anthophyta (flowering plants)	Cyperaceae	Cyperus	bipartitus			J. D. Jokerst	L. Ahart	1493	9/26/1981	Butte				Swale 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
37825	Anthophyta (flowering plants)	Cyperaceae	Cyperus	difformis			R. A. Schlising		3503	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
68408	Anthophyta (flowering plants)	Cyperaceae	Cyperus	strigosus			L. P. Janeway	C. A. Janeway	1865	9/14/1986	Butte	T21N R01W S02 NE1/4	120	ft.	On bank along small slough/backwater of the Sacramento River at "the washout."
34211	Anthophyta (flowering plants)	Cyperaceae	Eleocharis	radicans			J. D. Jokerst	L. Ahart	1481	9/26/1981	Butte				At the high water of a back slough at the Sacramento River. Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
45313	Anthophyta (flowering plants)	Cyperaceae	Eleocharis	coloradoensis			Vernon Oswald		3703	9/21/1988	Butte	T22N R01W S Rancho Arroyo Chico	115	ft.	Rancho Arroyo Chico. East side of Sacramento River just upstream from the Washout (Chico Landing Site).
34194	Anthophyta (flowering plants)	Cyperaceae	Fimbristylis	autumnalis			R. A. Schlising		3502	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
38927	Anthophyta (flowering plants)	Cyperaceae	Fimbristylis	autumnalis			Vernon Oswald		911	7/25/1983	Butte				Bidwell State Park, w of the parking area at the boat ramp, River Rd. near the washout.
34201	Anthophyta (flowering plants)	Cyperaceae	Lipocarpha	micrantha			J. D. Jokerst	L. Ahart	1487 B	9/26/1981	Butte				Low lying swale, E of Sacramento River ca 100 m, Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
37824	Anthophyta (flowering plants)	Cyperaceae	Lipocarpha	micrantha			R. A. Schlising		3501	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.

Appendix C
Chico State University
Herbarium Database Query Results
for Bidwell-Sacramento State Park

43658	Anthophyta (flowering plants)	Dipsacaceae	Scabiosa	atropurpurea			Vernon Oswald		907	7/24/1983	Butte				Boat ramp, Bidwell State Park, on River Rd. w of Chico near the washout.
28459	Anthophyta (flowering plants)	Elatinaceae	Bergia	texana			R. A. Schlising		3507	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
21015	Anthophyta (flowering plants)	Euphorbiaceae	Eremocarpus	setigerus			M. S. Taylor		947	10/3/1975	Butte		120	ft.	Roadsides, ca. 1/4 mi n of the washout, between River Road and the Sacramento River, ca. 10 mi w of Chico.
43671	Anthophyta (flowering plants)	Fabaceae	Sesbania	punicea			Vernon Oswald		2998	6/12/1987	Butte	T21N R01W S	115	ft.	South side of the mouth of Big Chico Creek at the Sacramento River.
34202	Anthophyta (flowering plants)	Juncaceae	Juncus	acuminatus			J. D. Jokerst	L. Ahart	1487	9/26/1981	Butte				Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico E bank Sacramento River.
21048	Anthophyta (flowering plants)	Lamiaceae	Lycopus	americanus			M. S. Taylor		934	10/3/1975	Butte		120	ft.	Abundant ca. 1/4 mi n of the washout on the Sacramento River, between River Rd and the Sacramento River, ca. 10 mi w of Chico.
19540	Anthophyta (flowering plants)	Lythraceae	Ammannia	coccinea			F. T. Griggs		143	8/8/1974	Butte				Growing in the Sacramento River between the Hamilton City bridge and the mouth of Big Chico Creek.
28620	Anthophyta (flowering plants)	Lythraceae	Ammannia	robusta			M. S. Taylor.		2213	10/2/1979	Butte		100	ft.	Scattered in sandbar in Sacramento River, at Chico Landing, ca. 5 mi w of Chico.
28475	Anthophyta (flowering plants)	Lythraceae	Rotala	ramosior			R. A. Schlising		3508	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
45332	Anthophyta (flowering plants)	Moraceae	Morus	alba			Vernon Oswald		2319	4/9/1987	Butte	T21N R01W S2	125	ft.	Bidwell River State Park between the Washout (Chico Landing Site) and Big Chico Creek.
13714	Anthophyta (flowering plants)	Oleaceae	Fraxinus	latifolia			M. S. Taylor		327	10/11/1974	Butte				Abundant along slough ca. 1/2 mi n of washout on the Sacramento River, ca. 10 mi w of Chico.
13710	Anthophyta (flowering plants)	Onagraceae	Epilobium	densiflorum			M. S. Taylor		333	10/11/1974	Butte				On sandbar in Sacramento River, ca. 1/4 mi n of washout, ca. 10 mi w of Chico.
45528	Anthophyta (flowering plants)	Onagraceae	Ludwigia	peploides	ssp.	montevidensis	L. P. Janeway	C. A. Janeway	1863	9/14/1986	Butte	T22N R01W S22 SE1/4	130	ft.	Pine Creek Landing; backwater of Sacramento River at Pine Creek. Along edges of the slough.
61053	Anthophyta (flowering plants)	Onagraceae	Ludwigia	peploides	ssp.	montevidensis	Vernon H. Oswald		5739	7/29/1993	Butte	T22N R01W S	125	ft.	Chico Landing (site) boat ramp, Bidwell River State Park, along the Sacramento River W of Chico. In slough and leading up to the ramp.
47037	Anthophyta (flowering plants)	Onagraceae	Oenothera	elata	ssp.	hirsutissima	R. A. Schlising		4480	10/6/1985	Butte	T22N R01W S	120	ft.	At Sacramento River, W of Chico, N of Chico Landing site. Along E edge of river.
23542	Anthophyta (flowering plants)	Poaceae	Arundo	donax			M. S. Taylor		936	10/3/1975	Butte		120	ft.	Ca. º mi n of the washout, between River Rd and the Sacramento River, ca. 10 mi w of Chico.

28737	Anthophyta (flowering plants)	Poaceae	Crypsis	schoenoides			R. A. Schlising		3500	10/13/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park; margin of river.
34195	Anthophyta (flowering plants)	Poaceae	Crypsis	schoenoides			J. D. Jokerst	L. Ahart	1488	9/26/1981	Butte				On sand bars adjacent to and E of Sacramento River at the Bidwell River State Park (Chico Landing), ca. 5.0 mi W of Chico.
29252	Anthophyta (flowering plants)	Poaceae	Digitaria	sanguinalis			M. S. Taylor		2209	10/2/1979	Butte		100	ft.	Sacramento River at Chico Landing, off River Rd., ca. 5 mi w of Chico.
34206	Anthophyta (flowering plants)	Poaceae	Echinochloa	crus-galli			J. D. Jokerst	L. Ahart	1485	9/26/1981	Butte				In swale (old river channel). Bidwell River State Park (Chico Landing) ca. 5. mi W of Chico. E bank Sacramento River.
34204	Anthophyta (flowering plants)	Poaceae	Eragrostis	pectinacea	var.	pectinacea	J. D. Jokerst		1501	9/26/1981	Butte				Swale ca 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34196	Anthophyta (flowering plants)	Poaceae	Leptochloa	fascicularis			J. D. Jokerst	L. Ahart	1496	9/26/1981	Butte				Ca 100 m E of Sacramento River at the Bidwell River State Park (Chico Landing) ca 5.0 mi W of Chico.
34203	Anthophyta (flowering plants)	Poaceae	Panicum	capillare			J. D. Jokerst		1486	9/26/1981	Butte				Bidwell River State Park (Chico landing) ca 5.0 mi W of Chico.
34785	Anthophyta (flowering plants)	Poaceae	Piptatherum	miliaceum			L. Ahart		3207	9/26/1981	Butte		40	m.	Near the Sacramento River s of the washout, ca. 6 mi w of Chico.
49562	Anthophyta (flowering plants)	Poaceae	Piptatherum	miliaceum			Vernon Oswald		1829	6/12/1985	Butte	T21N R01W S02 NE1/4 of NE1/4	125	ft.	Bidwell State Park slightly s of the Washout on River Rd. On a bank of the river.
28622	Anthophyta (flowering plants)	Potamogetonaceae	Potamogeton	crispus			M. S. Taylor		2216	10/2/1979	Butte		100	ft.	On e bank of Sacramento River at Chico Landing, ca. 5 mi w of Chico.
49685	Anthophyta (flowering plants)	Potamogetonaceae	Potamogeton	crispus			Vernon Oswald		3173	8/2/1987	Butte	T22N R01W S Rancho Arroyo Chico	120	ft.	Mouth of the slough leading into the boat ramp just upstream from the Washout (Chico Landing site) on the Sacramento River.
43865	Anthophyta (flowering plants)	Rosaceae	Pyrus	communis			Vernon Oswald		3262	3/24/1988	Butte	T21N R01W S05 SE1/4 of NE1/4	125	ft.	Rancho Arroyo Chico. Bidwell River State Park s of Chico Landing Site, just n of the access road to a gravel bar along the Sacramento River at Chico Creek.
13715	Anthophyta (flowering plants)	Salicaceae	Populus	fremontii			M. S. Taylor		326	10/11/1974	Butte				Ca. 50 ft e of Sacramento River, ca. 1/4 mi n of washout, ca. 10 mi w of Chico.
34210	Anthophyta (flowering plants)	Salicaceae	Salix	melanopsis			J. D. Jokerst	L. Ahart	1480	9/26/1981	Butte				5 mi W of Chico at Bidwell River State Park (Chico Landing).
21049	Anthophyta (flowering plants)	Scrophulariaceae	Antirrhinum	cornutum			M. S. Taylor		937	10/3/1975	Butte		120	ft.	On the Sacramento River, ca. 1/4 mi n of the washout on River Rd, ca. 10 mi w of Chico.
33526	Anthophyta (flowering plants)	Scrophulariaceae	Kickxia	elatine			R. A. Schlising		3512	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, just n of Chico Landing Site in Bidwell River State Park.
43146	Anthophyta (flowering plants)	Scrophulariaceae	Kickxia	elatine			R. A. Schlising		3512	10/14/1979	Butte	T22N R01W S			Along Sacramento River w of Chico, n of Chico Landing Site in Bidwell River State Park.

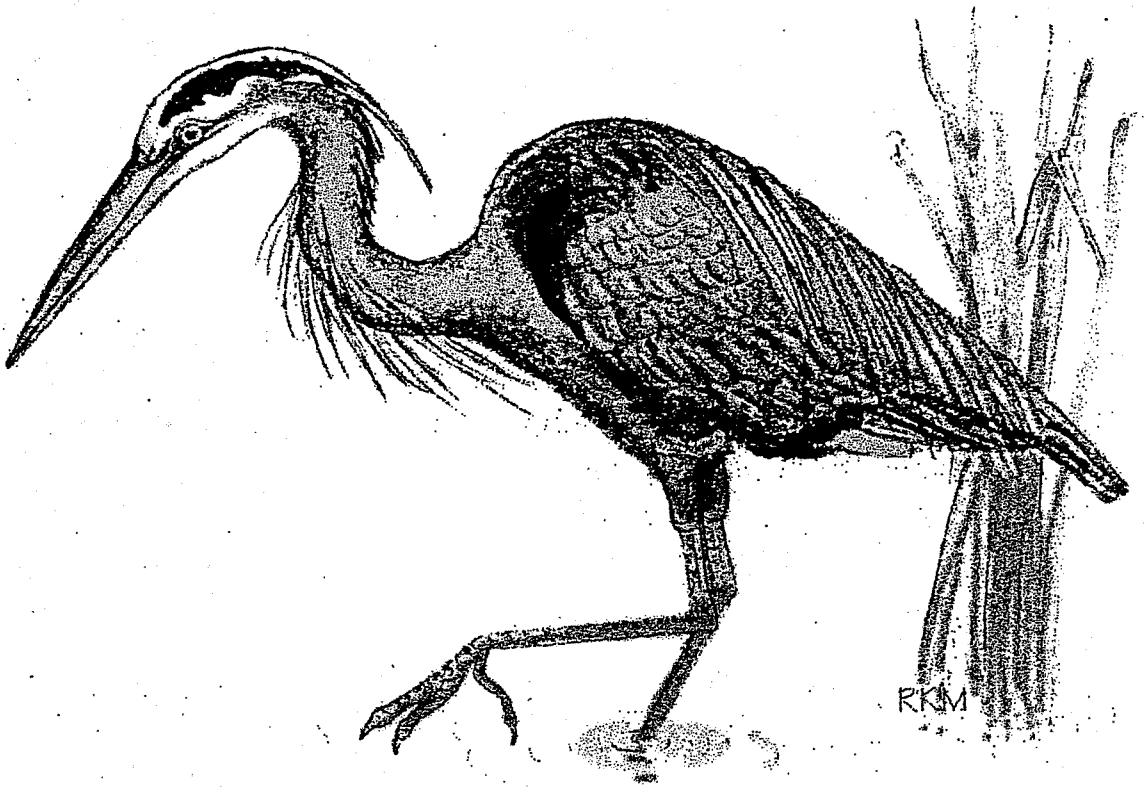
Appendix C
Chico State University
Herbarium Database Query Results
for Bidwell-Sacramento State Park

21050	Anthophyta (flowering plants)	Scrophulariaceae	Mimulus	pilosus			M. S. Taylor		938	10/3/1975	Butte		120	ft.	Scattered on sand bar on Sacramento River, ca. 1/4 mi n of the washout on River Rd, ca. 10 mi w of Chico.
28623	Anthophyta (flowering plants)	Scrophulariaceae	Veronica	anagallis-aquatica			M. S. Taylor		2214	10/2/1979	Butte		100	ft.	In sand bar in Sacramento River at Chico Landing, ca. 5 mi w of Chico.
49047	Anthophyta (flowering plants)	Scrophulariaceae	Veronica	anagallis-aquatica			Vernon Oswald		912	7/25/1983	Butte				Bidwell State Park, w of the parking area at the boat ramp on River Rd. near the washout.
49448	Anthophyta (flowering plants)	Verbenaceae	Phyla	nodiflora	var.	nodiflora	Vernon Oswald		3172	7/30/1987	Butte	T22N R01W S	120	ft.	Rancho Arroyo Chico. Mouth of the slough leading into the boat ramp just upstream from the Washout (Chico Landing site) on the Sacramento River.
49449	Anthophyta (flowering plants)	Verbenaceae	Phyla	nodiflora	var.	nodiflora	Vernon Oswald		910	7/25/1983	Butte				Indian Fishery (Tyler Slough), Bidwell State Park, at the w end of W. Sacramento Ave. w of Chico.
47285	lichens	Parmeliaceae	Evernia	prunastri			M. S. Taylor		2	1/30/1975	Butte				River Road at Washout, ca. 10 mi w of Chico.
24089	lichens	Parmeliaceae	Flavopunctelia	flaventior			C. J. Roy		6	1/30/1975	Butte				River Road at Washout.
24094	lichens	Parmeliaceae	Melanelia	subolivacea			C. J. Roy		4	1/30/1975	Butte				River Road at Washout.
24092	lichens	Parmeliaceae	Parmelina	quercina			C. J. Roy		4	1/30/1975	Butte				River Road at Washout.
23997	lichens	Physciaceae	Physcia	adscendens			C. J. Roy		6	1/30/1975	Butte				River Road at Washout.
24002	lichens	Physciaceae	Physcia	stellaris			C. J. Roy		2	1/30/1975	Butte				River Road at Washout.
24006	lichens	Physciaceae	Physcia				C. J. Roy		3	1/30/1975	Butte				River Road at Washout.
48209	lichens	Physciaceae	Physcia	adscendens			G. R. Pintler			1/26/1978	Butte				River Road at Washout.
24036	lichens	Ramalinaceae	Ramalina	leptocarpha			C. J. Roy		3	1/30/1975	Butte				River Road at Washout.
47282	lichens	Ramalinaceae	Ramalina	leptocarpha			M. S. Taylor		13	1/30/1975	Butte				River Road at Washout, ca. 10 mi w of Chico.
47284	lichens	Ramalinaceae	Ramalina	farinacea			M. S. Taylor		16	1/30/1975	Butte				River Road at Washout, ca. 10 mi w of Chico.
24057	lichens	Teloschistaceae	Xanthoria	fallax			C. J. Roy		2	1/30/1975	Butte				River Road at Washout.
24058	lichens	Teloschistaceae	Xanthoria	polycarpa			C. J. Roy		1	1/30/1975	Butte				Sacramento River at Washout, River Road.

APPENDIX D

BIDWELL-SACRAMENTO RIVER STATE PARK INTERPRETIVE PROSPECTUS, (1997)

BIDWELL-SACRAMENTO RIVER STATE PARK



INTERPRETIVE PROSPECTUS

May 1997

BIDWELL-SACRAMENTO RIVER STATE PARK

INTERPRETIVE PROSPECTUS

By
Richard K. McGaugh,
State Park Ranger I

Stephen W. Feazel,
District Interpretive Specialist

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Northern Buttes District

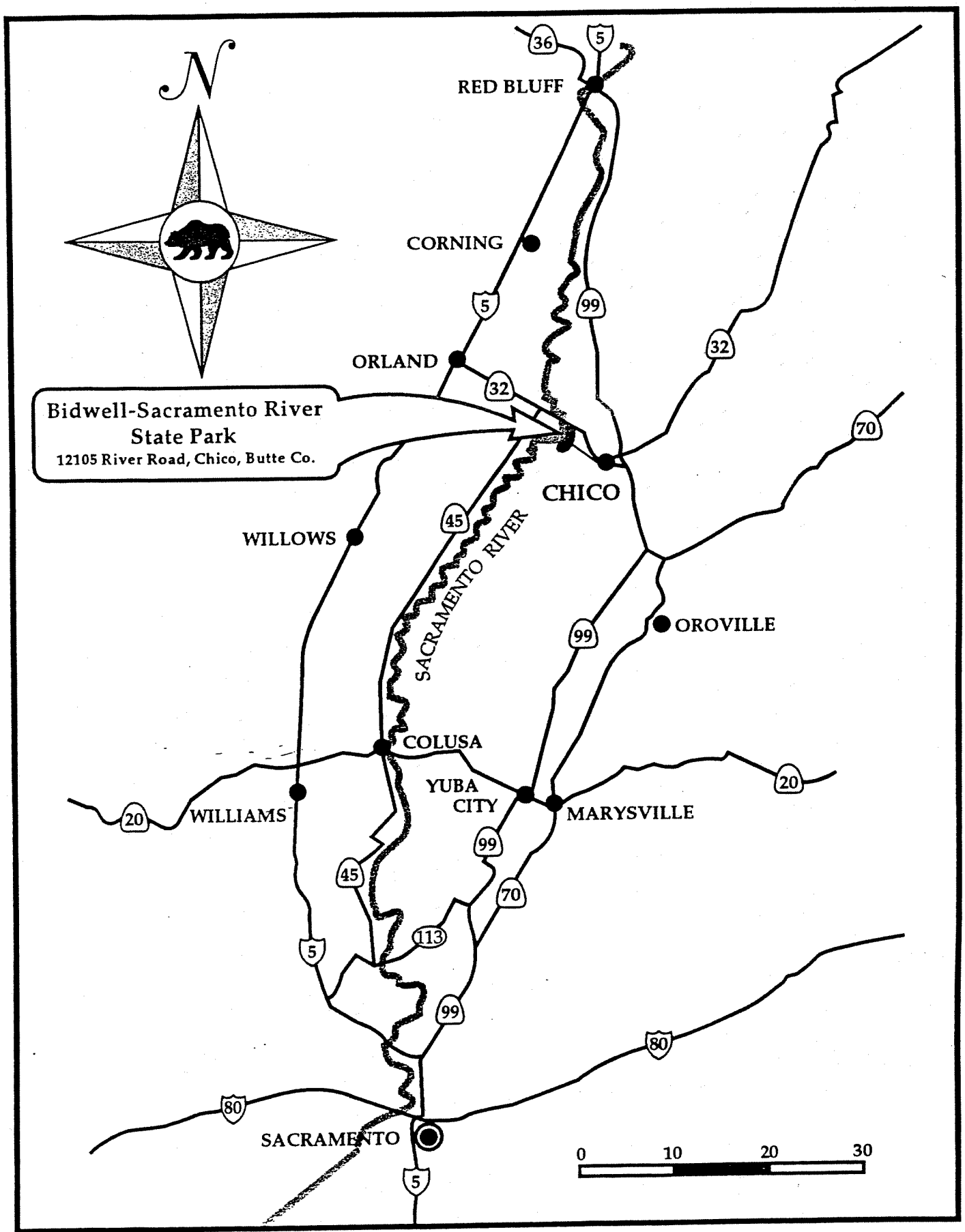
and

Richard D. Clark,
State Park Interpreter II
Northern Service Center

May
1997

Approved _____ Date 5/7/97

David E. Bartlett, District Superintendent
Northern Buttes District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RED BLUFF
CORNING
ORLAND
Bidwell-Sacramento River
State Park
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CHICO
WILLOWS
SACRAMENTO RIVER
OROVILLE
COLUSA
YUBA
CITY
MARYSVILLE
WILLIAMS
SACRAMENTO
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10
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99
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70
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20
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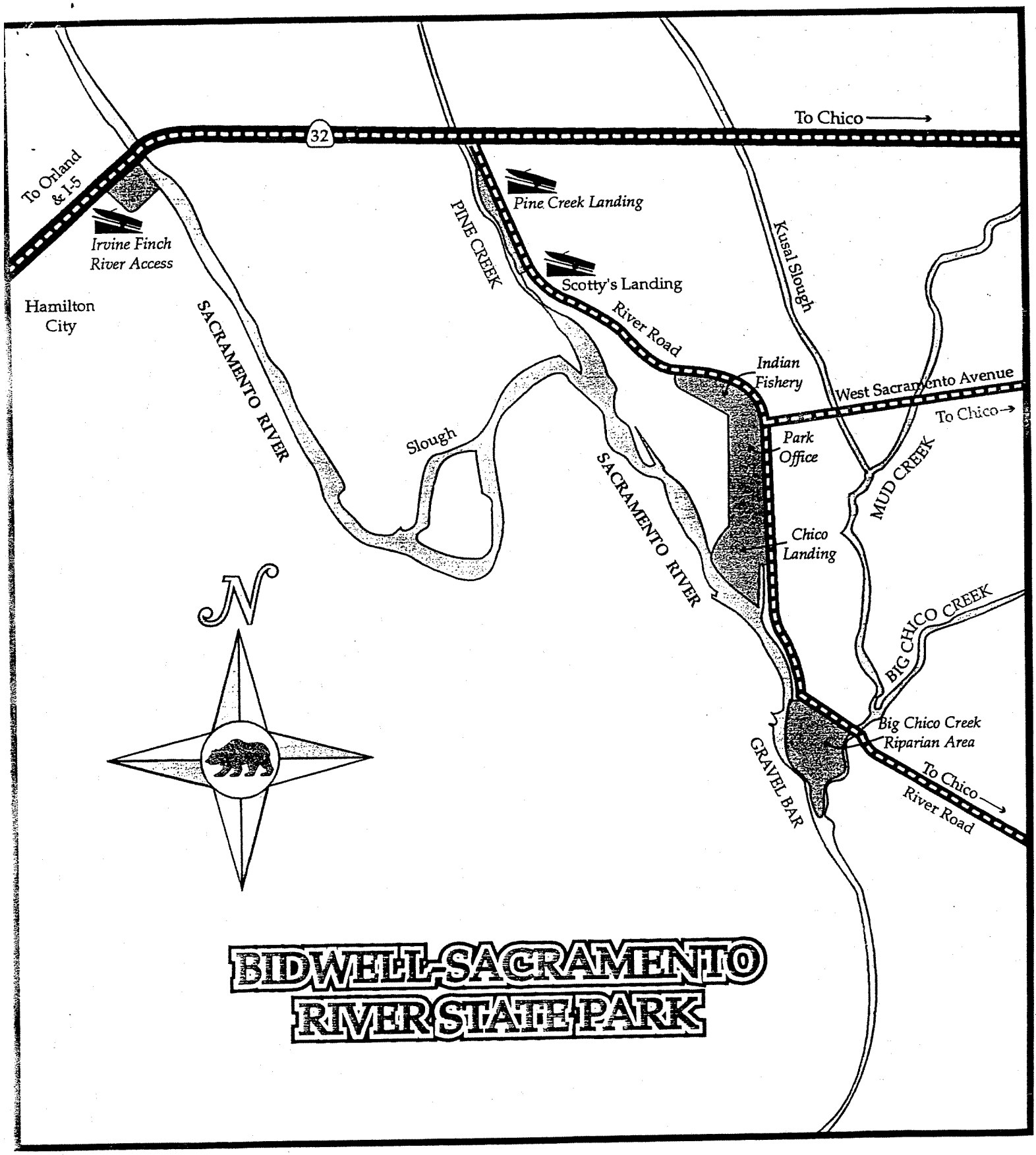
80

MAP NO.1


To Chico
32
To Orland & I-5
Irvine Finch River Access
Hamilton City
SACRAMENTO RIVER
PINE CREEK
Pine Creek Landing
Scotty's Landing
River Road
Kusal Slough
Indian Fishery
West Sacramento Avenue
To Chico
Park Office
MUD CREEK
Slough
SACRAMENTO RIVER
Chico Landing
BIG CHICO CREEK
Big Chico Creek Riparian Area
GRAVEL BAR
To Chico
River Road
N
BIDWELL-SACRAMENTO RIVER STATE PARK

MAP NO. 2

Introduction

This Interpretive Prospectus provides guidance for immediate interpretive development at Bidwell-Sacramento River State Park. When a General Plan is developed, it is expected that this Interpretive Prospectus will be revisited for possible updating.

This prospectus identifies factors that affect the interpretation of the natural and cultural environment at Bidwell-Sacramento River State Park. It makes recommendations that can positively influence the effectiveness of this interpretation, as well as heightening the public's understanding of natural and cultural history and appreciation of the park.

Interpretive Themes

Interpretation relies on themes to connect the significant natural, cultural, and recreational resources of the park to the visitors in personally meaningful ways. Themes define the point of view, and focus information that will be presented through various interpretive media.

Background Information

Location

Bidwell-Sacramento River State Park is located some six miles west of the City of Chico (see Map 1). It lies mostly on the east bank of the Sacramento River in the County of Butte. One segment, Irvine Finch River Access, lies on the west bank of the Sacramento River in Glenn County.

Service Areas

The park may be conveniently divided into five areas of use and location. Though the park is a whole, such a division provides a useful way of describing and discussing the interpretive needs of the park in workable and logical units. From north to south the areas of the park are: Irvine Finch River Access; Pine Creek Landing; Indian Fishery; Chico Landing; and Big Chico Creek Riparian Area (see Map 2).

Park History

On November 15, 1882, John Bidwell conveyed 11.45 acres of land to the County of Butte to build roads to give access to the river. On July 1, 1908 Mrs. Anne E.K. Bidwell deeded to the state a strip of land running west from

Chico along the north bank of Chico Creek for some five miles to the Sacramento River, a strip running on both banks of the Lindo Channel some six miles to the Sacramento River, and a strip running the length of the east bank of the Sacramento River some four miles. This land was to be under the auspices of the State Forestry Service and was to protect tree growth along the wooded banks.

Partly because of the possible overlapping of areas in deeds and conveyances, and the resultant clouding of titles between the state and the county, it was decided in 1950 that the state would convey its portion to the county and thereby merge the deeds. This was authorized by the State Park Commission March 17, 1950.

The state leased additional properties to the County of Butte for recreational purposes. At this time the park consisted of about 181 acres, but not including Irvine Finch River Access, a later acquisition.

The county did not want to develop a parks and recreation program and so leased some land to the Chico Area Recreation and Park District (C.A.R.D.). C.A.R.D. in turn leased nearly all the property to a rod and gun club. By the 1960s boundary disputes with neighboring land owners frustrated efforts at developing a master facilities plan.

A planned cadastral survey of disputed boundaries was not completed. Hunting, shooting, wood-cutting, dumping and the intrusion of off-road vehicles defiled the park. In 1972, at the request of petitioning local government, the California Department of Parks and Recreation was mandated by the legislature to study alternative methods to preserve Bidwell River Park. A resulting 1974 report recommended that Bidwell River Park be acquired by the state as part of the State Park System. A 1977 bill authorized the acquisition of Bidwell River Park and on August 1, 1979, the park was transferred back to the State Park System. It was named and classified as Bidwell-Sacramento River State Park in 1990.

Boundary concerns have been resolved as a result of an extensive State Park Survey and Agreements with Butte County. There has also been an ongoing effort to recover the park by closing off roads, and installing park boundary fences and boundary markers.

Role In Education

Historically the park has emphasized recreation, but by reclaiming the habitat the department has provided an ideal resource for the study of riparian ecology. Local educators have availed themselves of this resource, from

kindergarten through master's degree programs. One of the goals of this document is to increase interpretation for educational purposes.

Planning Considerations

Themes need to be developed to organize the interpretation of Bidwell-Sacramento River State Park and the region's natural and cultural history and environment. In formulating themes, attention should be given to the following:

- The story of Bidwell-Sacramento River State Park has ancient geologic and hydrologic origins.
- The park area's particular origins and its riparian nature have consequences for the kind of habitat it will support.
- The river park's narrative continues with the interaction and use by various cultures: prehistoric cultures; ethnographic and ongoing interaction by the ~~Konkow~~ Mechoopda peoples; the incursions of Spanish Colonial and Mexican downstream residents; and then arrival and settlement by trappers and pioneers from parts of Europe, but mainly from an expanding United States.
- The river had an important transportation role with river boats, ferries (Bidwell Ferry), roads, bridges (Giannelli Bridge), a railroad bridge, and wharves.
- Agriculture has been important since the days of the Bidwells and includes orchards, livestock raising and dairying, rice crops and other grains, and sugar beets and other row crops.
- Commercial and subsistence fishing, hunting, and trapping were early pre-recreational uses of the river.
- Fishing and hunting were joined by boating, rafting, tubing, bird watching, and water skiing as recreational uses of the river.
- Early recreation uses of the river area included river bank dance halls.

Focus

Interpretation of Bidwell-Sacramento River State Park should provoke an understanding of riparian systems, specifically that of the Sacramento River.

Approach

- To present Bidwell-Sacramento River State Park in the context of a riparian habitat.
- To be cognizant of the mission of State Parks in preserving the riparian habitat while providing quality natural, cultural and recreational experiences.

- To present the Bidwells' story as an important part of the interpretive history of the park.

RECOMMENDATIONS

The approach for interpretive development in the park will be guided by the themes described below.

Riparian/Riverine

UNIFYING THEME

The ~~Riparian~~ Habitat is Dynamic and Critically Important to the Health of the Sacramento River and All Life Associated with It.

The riparian nature of the habitat of Bidwell-Sacramento River State Park is the dominant feature of the park; the existing habitat is representative of what once dominated the rivers and streams of California. Only about 20% of the riparian habitat remains since Euro-American arrival in California.

Primary and Secondary Themes

Primary and secondary themes should be developed for each park area. They should define the use and meaning of that area and reflect its contribution to the whole park. The development of the themes for each area will appear in the subsection concerning that area. Such interpretive themes may be primary to an area, but that does not exclude their applicability to other areas of the park.

Interpretive Periods

The Interpretive Period sets the framework for interpretation in the park, directing and focusing interpretive themes, facilities, and activities to represent appropriate, specific years or groups of years.

Background Information

Natural History

Taken as a whole, Bidwell-Sacramento River State Park is an example of classic riverine, or riparian landscape. The park contains examples of nearly every successional stage of riparian habitat that can be associated with the river— from barren gravel bars, to pioneering thickets of young cottonwoods, willow, and alder, to towering forests of mature cottonwood, and finally, to the

climax oak woodland community. All habitat types and their associated residents can be observed within the park.

The younger successional stages (willow, alder, etc.) are easily observed anywhere along the river's edge. The successional stages are constantly being produced as the river meanders through the valley, creating and shifting gravel bars about, washing away then depositing tons of silt in which the new seedlings will sprout. This is a process that has been repeating itself for many thousands of years. The older, later successional stages, such as the oak woodland, are less evident, as they take years longer to produce. Most of this type of habitat along the river has been replaced in recent human history with agriculture, owing to the richness of the accumulated soils. However, a good example of oak woodland does exist at Indian Fishery.

The riparian habitat along the river course supports many hundreds of species of plants and animals, some of which are unique to the riparian environment. Providing a rich source of food, shelter, and environmental conditions (e.g., temperature, shade, humidity, water for drinking), the riparian forest is important to all its inhabitants for their survival. It is immeasurably important to California today as an educational example of river dynamics and riparian plant community succession.

Native Americans

Archaeologically, there is a time depth of human occupation in the local area of around 4500 years. The peoples residing in the area during the late prehistoric period up to and through contact with Euro-Americans, are known to us today as the Northwestern Maidu or Konkow. The Konkow, along with the Maidu (Northeastern Maidu) and the Nisenan (Southern Maidu), form a sub-group of the California Penutian linguistic family. Konkow territory covered a portion of the Sacramento Valley from somewhat west of the Sacramento River and ran east into the foothills above Oroville and Chico.

Divided into communities of adjacent villages organized for ceremonial and subsistence activities, the Konkow followed a seasonal subsistence cycle. Wintering in permanent villages, they went into the valley in spring for grass seeds and other plant materials. In summer they hunted game and gathered plants from temporary camps. In autumn they located around streams to catch salmon and traveled to oak groves to gather acorns.

Several Konkow village sites are known in the area immediately around the park boundaries. Six archaeological sites have been identified, but are outside the park boundaries.

Euro-Americans

The Konkow may have first met Europeans and Euro-Americans beginning with the Moraga expedition of 1808. Luis Arguello explored the Feather River in 1821, and the Jedediah Smith party spent several months in Konkow territory in 1828. Between 1825 and 1840, Hudson's Bay Company trappers and American fur traders wandered the Sacramento valley. In 1841 Lieutenant George Emmons and a party of 39 members from the Charles Wilkes scientific expedition passed by on the west bank of the Sacramento River. In 1843 John Bidwell first got sight of the area.

During 1844, three land grants were awarded that encompass much of the present-day park: Rancho Arroyo Chico, five square leagues granted to William Dickey, includes most of the current park; Rancho de Farwell, five square leagues granted to Edward A. Farwell, was to the south; and Rancho Capay, ten square leagues granted to Josefa Soto, was to the west of the river. Much of Rancho Capay later became the property of Richard J. Walsh, a Shasta merchant. To the north, along Pine Creek, the land was unclaimed and became part of US public domain. In 1849 John Bidwell acquired Rancho Arroyo Chico from William Dickey.

Planning Considerations

The primary interpretive period should be in harmony with the park's Unifying Interpretive Theme. Secondary interpretive periods can be used to highlight other eras that help tell the story, and help place the park in the appropriate natural and historic context. In setting the park's interpretive periods, it should be noted that:

- The river and its riparian flanks are the story.
- The story is rooted in geological history.
- People eventually interact with the river and its ecology and have an affect on the environment or play a part in the resource management of the park unit.
- The act of giving land to the state and setting in motion those events that turned it into a state park have historical importance.

Primary Interpretive Period: *The Present*

The Primary Interpretive Period is the present, today; what is most important to interpret about the park is how it is now. Though the river and the riparian course are dynamic, what should be interpreted is the immediate.

Secondary Interpretive Period: *Prehistoric origins*

Prehistoric origins should interpret the geologic and hydrologic development of the river and its changing riparian environment.

Secondary Interpretive Period: *Human prehistory*

Human prehistory includes the interaction of the Native Americans with the river and the riparian basin up to the coming of the Euro-Americans.

Secondary Interpretive Period: *Early history and General & Annie Bidwell*

This period includes the early Euro-American period, and focuses on the uses of the river and its surrounding land up to the time of Annie Bidwell's gift to the state.

Secondary Interpretive Period: *Annie's Gift up to the present*

This period covers the changes that went on with the small portion of land Annie Bidwell gave to the state, as well as the other portions that have become a part of the Bidwell-Sacramento River State Park.

GENERAL RECOMMENDATIONS

- Interpretive information should reflect the needs of the user.
- The sub-entrance sign for each area should be replaced with a newer, more "park-like" structure that both identifies the area and identifies it as a part of Bidwell-Sacramento River State Park.
- These sub-entrance signs should also include the park's hours of operation. There should be adequate signing to situate the visitor within the specific area, as well as orienting them to the rest of the park.
- Specific interpretive spots within the site area should be identified. Locations of facilities should be clearly marked.
- Parking and no parking areas need to be clearly marked.
- Programs for presentation on-site or off-site about the area will need to be developed and made available.

Irvine Finch River Access

Background Information

Irvine Finch River Access is the only area of the park in Glenn County. It was created when the old steel Giannelli Bridge, a turn bridge, was replaced by a modern high-arch concrete bridge. A portion of land was acquired to be set aside to provide recreation access to the Sacramento River. This was due, in great part, to the efforts of Irvine Finch, a former Glenn County Supervisor. The five acres provide parking for those wanting to use the launching facilities of the park.

Planning Considerations

Current conditions at Irvine Finch River Access include the following:

- Parking spaces for 295 vehicles.
- A launching ramp.
- Rest rooms.
- Two ramadas for picnickers.
- One notice/interpretive shelter.

Interpretive facilities planned for Irvine Finch River Access should take the following into account:

- The river must be accessible.
- Recreational opportunities must be available.
- Safety is always a primary concern.
- Natural history must not be outweighed by recreation.
- The history of the area also needs to be interpreted.

Area Interpretive Themes

Primary Theme

Access to Recreation: The River Provides the Opportunity to Fish, Hunt, Observe Nature, and Participate in Water Activities.

Irvine Finch River Access is the primary entry to the recreational opportunities of the park. The launching facilities provide entry for fishing boats, ski boats, jet skis, and the ever popular inner tube and similar rafts. The river provides opportunity for all sorts of water craft sports and activities. It is here that visitors launch on to the river to fish for steelhead, salmon, bass, and

sturgeon. In fall and winter the visitors launch boats to hunt for pheasant, ducks, geese, and dove.

Secondary Themes

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Safety in Recreation: The River Moves Relentlessly and Water Safety is a Principal Concern.

~

History of the River Banks: As the River Flows Through Time, Cultural Changes Occur to the Surrounding Land.

The variety of recreational activities, the variety of water craft used, and the variety of water safety skills the visitor brings to his day on the river make water safety an important concern. This concern needs to be communicated to the visitor.

The variety of changes to the land and the variety of human uses of the land need to be interpreted to the visitor.

Focus

The focus of interpretation at Irvine Finch River Access is recreation.

Approach

Interpretive Panels

- Interpretive panels should be guided by the general and the site specific themes.

Special Events

- Promote special events by local community groups.

PROPOSED INTERPRETATION

The major emphasis of interpretation at Irvine Finch River Access will focus on the interpretive themes using interpretive panels and special events.

Pine Creek Landing

Background Information

The Pine Creek Landing property was part of a parcel of land along the Sacramento River that, along with other streamside parcels throughout the Chico area, was deeded to the state of California by Annie E.K. Bidwell on July 1, 1908.

The park property in State ownership was leased by the Division of Beaches and Parks to Butte County in 1950 by legislative deed, for recreational purposes. Since Butte County did not want to manage these lands for parks and recreation, they leased the property to the Chico Area Recreation District, who sub-leased it to a local rod and gun club.

The property at Pine Creek was sub-sub-leased to private concessionaires who established a boat landing business at the site. The concessions contract was subsequently re-sold to several successive owners through the 1960s and 1970s.

In August of 1979 the park was transferred back into the State Park System and the Pine Creek Landing was once again owned by the State of California. The concessionaire at the time of re-acquisition was occupying the property. He ran a boat launch, landing, mooring business, and a beer bar. He was unable to make necessary improvements to the operation called for by contract with the state, and so relinquished his claim on the property to the state. The property was cleaned up and several run-down structures were removed from the site, including the remains of a dilapidated boathouse which at one time housed a Sea Scout station established at the site in 1944.

Planning Considerations

Current conditions at Pine Creek Landing include the following:

- The current Pine Creek Landing day use area consists of an approximately 4 or 5 acre site adjacent to Pine Creek.
- There is a small, pre-existing boat launch ramp, and a parking area adequate for about 15 vehicles with boat trailers near the ramp.
- There are four picnic sites, with a short trail connecting them, and fishing access to numerous sites along the bank of Pine Creek. A second parking area will accommodate about six vehicles.
- Family use at this site is increasing.
- There is no potable water source or rest room facility in the area.

- The typical activities are fishing, boating related to fishing, canoeing, kayaking, picnicking, relaxing, bird and wildlife watching, and walking.

Interpretive facilities planned for Pine Creek Landing should take the following into account:

- Most of the area's visitors will continue to come for fishing, boating and fishing access.
- There need to be adequate facilities available for the convenience of the park users.
- The presence of the riparian vegetative resources at the site should determine the primary focus of any interpretive panels and/or displays.
- The significant cultural history associated with the area warrants interpretation (e.g., Bidwell's Ferry site; the Sea Scout Station site, or early settlers).
- The area is adjacent to a well-traveled road and will always be subject to the intrusive noise from the presence of automobiles as well as power boats on the water.
- Much of the area adjacent to Pine Creek is subject to annual inundation due to seasonal flooding of both Pine Creek and the Sacramento River. Any facilities installed must be designed with this in mind.

Area Interpretive Themes:

Primary Theme

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Riparian Tributaries: The Riparian Habitat is a Unique Feature of the Sacramento River Tributary System

Secondary Theme

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Habitat Flows into Habitat: The River Meander Creates a Slough at Pine Creek Landing

The presence of the riparian vegetative resources at the site, the nature of Pine Creek tributary, the annual inundation, and the resultant slough provide a special opportunity for interpretation of a river meander system.

Focus

The primary focus for interpretation at Pine Creek Landing should be consistent with the overall theme for the park and emphasize the importance of the riparian forest.

A secondary focus should be on the kinds of recreation engaged in by visitors with emphasis on fishing, boating, and observing nature.

Approach

Since the area is part of the riparian community, it will not be difficult to point out examples of the constituent elements of a riparian area. The riparian zone should be interpreted as a whole, but individual components should also be singled out for a more in-depth explanation.

The various types of fish available and techniques for successful fishing should be interpreted. Tips for safe boating and information about canoeing and kayaking in the area should be made available by panel or brochure. Inclusion as a part of the overall interpretation of the area is essential to properly appreciate the Pine Creek site. There is rich local history associated with the Bidwells and the operation of the area as a Sea Scout station.

Interpretive Trails

- Canoe interpretive trails: "Up the Creek with a Paddle."
- A fisherman's footpath that connects some of the access and fishing sites should be developed to serve as a "mini-interpretive trail"

Interpretive Panels

Panels to be used at the Pine Creek Landing area could include the following topics:

- Value of riparian forest vegetation. from prehistory to now
- Fish and fishing in Pine Creek.
- History of the Sea Scout station at Pine Creek Landing.
- History of John Bidwell's Ferry. - Chico landing, Keaus Ferry & Chico Free Bridge.
- Boating and boating safety.

Brochures

- Interpretive canoe trail brochure: "Up the Creek with a Paddle."

PROPOSED INTERPRETATION

Any interpretation proposed for the Pine Creek Landing area will be new, since there is currently no interpretation taking place at the site. Specific sites for the installation of interpretive facilities need to be investigated and marked.

Locations of all signs, markers, and displays will have to be established. Local historical interest groups should be contacted for assistance with the historical site facilities, markers and displays.

A quality interpretive program at Pine Creek Landing will encourage visits by school groups and the local citizenry. Additionally, existing user groups such as fishermen, picnickers and boaters will find their park experience enhanced by quality, on-site interpretation. A canoe interpretive trail will provide a unique interpretive experience for canoeists.

Indian Fishery

Background Information

In the late prehistory and early Euro-American periods, as folk memory has it, fish weirs were built and used at this location. This memory has manifested itself in the traditional place name for the area. — ~ date —

Indian Fishery is located west of the intersection of River Road and West Sacramento Avenue. It consists of approximately 35 acres, including an ox-bow lake, riparian vegetation on high terrace, and an oak woodland with an understory of mixed grasses and poison oak. California wild grape and California pipevine can be found in abundance throughout the area.

The area is a day-use park for such activities as hiking, fishing, and picnicking. Indian Fishery has a 1/2 mile hiking trail, called Indian Fishery Nature Trail, that winds through the oak woodland understory along the edge of the ox-bow lake. The trail has sixteen trail markers that direct the visitor's attention to various elements of interest along the way. They include characteristic plants, examples of human impact, changes in the river course, animal inhabitants, and evidences of their activities.

The trail which begins and ends at the parking lot, has been established for day-users. The public use area has been fenced to separate it from the surrounding natural wildland area. There are picnic tables and a portable rest room.

Fishing is popular in the ox-bow lake for bluegill, crappie, largemouth blackbass, and catfish. The lake is relatively shallow and quite warm in the summer.

Planning Considerations

Interpretive facilities planned for Indian Fishery should take the following into account:

- This is a multi-use area for hiking, fishing and picnicking.
- Interpretation should address the impact of visitors on the natural resources of Indian Fishery.

Area Interpretive Themes

Primary Theme

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Ox-bow Lakes Are Dynamic: The Ox-bow Lake at Indian Fishery is an Offspring of the Ever Changing Sacramento River Hydraulic System

Secondary Themes

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Oak Woodlands: The Oak Woodland at Indian Fishery is an Integral Part of the Riparian Corridor

~

The Indian Fishery Weir: The Site of the Vanished Historic Weir at Indian Fishery Represents The Native American Uses of the River and its Riparian Habitat

~

Steamboats And Dances: With the Arrival of Euro-Americans on the River the Uses of the River Change and Affect the Riparian Boundaries

The ox-bow lake at Indian Fishery provides a distinct opportunity to interpret the evolution of the Sacramento River hydraulic system. The oak woodland is an important vegetative response to the changing environment of the area. Late pre-historic and early Euro-American uses of the river reflect the history of Indian Fishery.

Focus

The focus of interpretation at Indian Fishery should be for school or educational purposes.

Approach

Interpretive Trails

- Trails should be self-guided.
- Consideration should be given to developing a loop trail around the lake in cooperation with the Department of Fish and Game and The Wildlife Conservation Board.

Interpretive Panels

- Interpretive panels should expound the themes of Indian Fishery.
- Panels should be kept within the general public use area.

Special Events

- Promote special events by local community groups.

PROPOSED INTERPRETATION

A speakers' series would be an appropriate event for Indian Fishery as would guided and self-guided nature walks and school environmental trail experience programs. Interpretive panels and signs are valuable here.

Chico Landing

Background Information

The traditional name for this area, Chico Landing, may be something of a misnomer as the mouth of Big Chico Creek was probably the original Chico Landing site. However, the location of the landing was probably moved several times because of changing conditions of gravel bars, the river bluff, snags, and channel depth. No doubt one of the sites was in this area.

Chico Landing was an important connection point with the Shasta stages in the 1850s, and served as an outlet for the cattle ranch of Richard J. Walsh, a Shasta merchant, and for John Bidwell's agricultural products. The upper Sacramento River was the most convenient and fastest method of moving freight into the upper valley until the completion of the Oregon and Pacific Railroad to Red Bluff in 1872. Down-river traffic to Sacramento and San Francisco assumed importance after 1860.

Present day Chico Landing is located south of the Park Office between River Road and the Sacramento River. It consists of approximately 90 acres including high terrace riparian vegetation and an oak woodland with an understory of mixed grasses and poison oak. California wild grape and California pipevine can be found in abundance throughout the area.

Planning Considerations

Interpretive facilities planned for Chico Landing should take the following into account:

- The riparian environment.
- The historic aspects of Chico Landing.
- The value of a non-intensive, low maintenance environmental camp.
- The value of outdoor education.

Area Interpretive Themes

Primary Theme

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The River Is the Laboratory: Chico Landing is an Outdoor Laboratory that Provides a Site for Educational Experiences that Demonstrate and Communicate the Value of Riparian Habitat

The particular opportunity that an outdoor laboratory would provide expands the scope of interpretation for the area and the park.

Focus

Chico Landing provides a site for education and recreation in a riparian environment.

Approach

Chico Landing provides a site for riparian research, outdoor education, recreational opportunities, and a primitive camp for educational groups.

Interpretive Trails

- Use existing trails where possible.

Interpretive Panels

- Interpretive panels should enhance the outdoor laboratory concept.
- Panels should interpret the riparian habitat.

Brochures

- Develop an Outdoor Laboratory brochure.
- Guidelines for use of the area.

PROPOSED INTERPRETATION

The primary interpretive use of this site will be as an outdoor laboratory for all age groups. The site will include space for a low maintenance, removable, primitive camp. This camp will only be available to educational groups who are using the riparian habitat as their teaching laboratory (See Appendix B).

Big Chico Creek Riparian Area

Background Information

Big Chico Creek Riparian Area is on approximately 45 acres between River Road, the Sacramento River, and Big Chico Creek. The site was part of Bidwell's Rancho Chico property. This area consists of a relatively mature riparian forest with inland successional stages present from the bare gravel bar next to the river to the mature cottonwood forest. There are some very old pecan and English walnut trees scattered throughout the area, evidence that this tract was once cleared and planted to orchard. Once abandoned as agricultural land, the area has returned to native riparian forest.

The mouth of the Big Chico Creek was probably the original Chico Landing site, although it is more than likely the location of the landing was moved numerous times. The area is subject to annual flooding of both the Sacramento River and Big Chico Creek. It is thickly vegetated and is important for wildlife habitat. Because public access to the Sacramento River has been established, it is one of the park's most consistently visited areas. Fishermen, sunbathers, and river floaters all take advantage of the adjacent gravel bar.

Planning Considerations

Interpretive facilities planned for Big Chico Creek Riparian Area should take the following into account:

- Boating, skiing, jet skiing, and tubing.
- Gravel bar recreation in the summer.
- School group visitation for riparian forest areas.
- Expansion of game trails into interpretive trails and fisherman's access.
- Serious seasonal flooding and accessibility problems.
- Gravel bars are nurseries for fish fry.

Area Interpretive Themes

Primary Theme

Changing Face of the River: Confluence of the Big Chico Creek and the Sacramento River Dynamically Redefines the Riparian Landscape

Secondary Themes

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The River Requires Stewardship: With Good Stewardship a Healthy Riparian Environment Allows a Healthy Wildlife Environment to Return

~

Recreation and the Gravel Bar: Recreational Use of the Gravel Bar Interrupts the Natural Cycle as the Gravel Bar Provides Environment for Fish Fry, Fry Feeders, and Pioneer Forests

~

Safety in Recreation: The River Moves Relentlessly and Water Safety is a Principal Concern.

The variety of recreational activities, the water craft used, and the water safety skills the visitor brings to his day on the river make water safety an important concern which needs to be communicated to the visitor.

Focus

Interpreting riparian habitat and recreation in a riparian environment will be areas of focus.

Approach

Much of the interpretation to the general public at Big Chico Creek Riparian Area would be dependent on redefined trails, portable interpretive signs, brochures, and public contact with trained staff.

Interpretive Trails

- Nature walks will interpret the natural and wildland areas using existing trails.

Interpretive Panels

- Develop removable interpretive panels based on the themes for the area

PROPOSED INTERPRETATION

Interpretation at Big Chico Creek Riparian Area will consist of interpretive nature walks, interpretive panels that interpret the themes of the area, and special events as requested.

APPENDICES

A. Partial Outside Resource List

California Department of Fish and Game

The Wildlife Conservation Board

The Nature Conservancy

United States Fish and Wildlife Service

California State University, Chico

Butte County

Sacramento River Preservation Trust

B. Proposal For Special Primitive Group Camp And Outdoor Education Concept

An outdoor education area with sites for overnight camping is proposed for an area within the defined Chico Landing area. There is currently a location referred to by park employees as the "burn-pile", which is what the site was used for in the past. This area is accessible through a locked gate, a controlled entry-point, and has enough open space for a small parking lot, room for portable toilets, and so forth. A footpath leads to a nearby clearing adjacent to a small pond, which is a remnant of the old river channel. This area provides access to many unique examples of riparian habitat and river dynamics and therefore lends itself well to the establishment of an outdoor laboratory or classroom site. There is currently no location like this set up for educational activities in the Sacramento River vicinity near Chico.

There is growing interest in the Sacramento River riparian habitat by university students from California State University, Chico, and by students from schools in the Chico area. Additionally, there are no camping facilities within twenty miles of Chico. There are many requests from organized groups for overnight environmental living studies programs.

It is proposed that this area be developed to include environmental trails, an outdoor environmental classroom or instruction sites, overnight campsites, and parking and sanitary facilities. All facilities would be "primitive" and reversible. This facility would be available on a reservation basis only.

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APPENDIX E

MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT, USFWS, AND CDFG (2001)

MEMORANDUM OF UNDERSTANDING

between

THE U.S. FISH AND WILDLIFE SERVICE
regarding the
SACRAMENTO RIVER NATIONAL WILDLIFE REFUGE

and

THE CALIFORNIA DEPARTMENT OF FISH AND GAME
regarding the
SACRAMENTO RIVER WILDLIFE AREA

and

THE CALIFORNIA DEPARTMENT OF PARKS AND RECREATION
NORTHERN BUTTES DISTRICT

I. PARTICIPANTS

This Memorandum of Understanding (MOU) is an agreement for land management purposes between the U.S. Fish and Wildlife Service regarding the Sacramento River National Wildlife Refuge (Service), the California Department of Fish and Game regarding the Sacramento River Wildlife Area (Department), and the California Department of Parks and Recreation regarding the Sacramento River State Parks (State Parks). In addition to presently owned and managed lands, this MOU will also apply to any future acquisitions by the Service, Department, and State Parks within the designated units.

II. PURPOSE

The purpose of this MOU is to formally document an agreement to mutually manage, monitor, restore and enhance lands managed for fish, wildlife, and plants along the Sacramento River in Tehama, Butte, Glenn, and Colusa Counties, California. An additional purpose is to communicate between agencies regularly to prevent duplicating or prescribing conflicting land management and acquisition efforts.

III. AUTHORITY

Fish and Wildlife Coordination Act of 1958, 16 U.S.C. 661.
Migratory Bird Conservation Act, 16 U.S.C. 715i.
Endangered Species Act of 1973, 16 U.S.C. 1531-1544.

IV. SCOPE OF ACTIONS

The affected area includes all lands owned and managed as the Sacramento River National Wildlife Refuge, Sacramento River Wildlife Area, and State Parks located along the Sacramento River in the designated counties. These lands have been identified in several documents as providing essential habitat for numerous species of fish and wildlife including many threatened and endangered species. The Service, Department, and State Parks mutually agree to manage these lands for the conservation of biological, cultural, and scenic values, and for promoting compatible wildlife-dependent recreational opportunities.

The Service, Department and State Parks agree to cooperate on the following items:

A. General Management:

- Combine efforts to mutually manage, monitor, restore, and enhance fish and wildlife management projects in the designated area.
- Coordinate management between agencies to prevent duplicating or prescribing conflicting management.

B. Public Use:

- Coordinate to provide public use opportunities that are consistent with the goals and needs of both agencies and their respective public.
- Provide clear, non-conflicting, straight-forward information to visitors.
- Cooperate in the development of public use plans. This would include cooperating with signing, brochures, use maps, and regulations.
- Promote mutual environmental education and special event opportunities.

In some instances, an agency may need to change its public use regulations in a specific area to protect natural resources (i.e. sensitive species) and provide a quality outdoor experience for the public. All public use will be offered in a manner that is consistent with land purchase and public trust documents, and is compatible with Service, Department, and State Parks purposes and missions.

C. Acquisition:

- Coordinate on acquisition plans.
- Prevent duplicate or conflicting acquisition efforts.
- Pursue joint funding opportunities when applicable.

D. **Maintenance:**

- Coordinate and share maintenance equipment and staff, whenever possible.
- Negotiate transportation and maintenance/repairs of shared equipment.
- Combine maintenance work parties to address specific concerns in a timely manner and to reduce funding needs for joint project.

E. **Biological Data:**

- SURVEYS. Data collection will be coordinated and standardized between agencies whenever possible to strengthen study results and to aid interpreting trends in wildlife and plant populations. Agencies agree to coordinate efforts in research of threatened and endangered species, migratory birds, fish, wildlife (including predators), and plant surveys. Combining funds for a specific contract, arranging for volunteer and staff assistance, and sharing equipment (i.e. boats, ATV, etc.) may facilitate research projects.

- RESEARCH. Research needs will be identified and efforts combined to initiate and fund specific research projects.

- MONITORING. Monitoring of restoration project sites will be coordinated so that the information is comparable, consistent and complementary. Efforts may be combined to fund and staff specific monitoring components.

F. **Permits:**

The agencies will communicate and cooperate on permits. Combined or regional environmental documents and permits that could benefit both agencies will be considered. Special-Use Permits will be required for all activities on Service lands and the equivalent required for all activities on Department and State Parks lands.

G. **Law Enforcement:**

The agencies will communicate and cooperate on law enforcement issues. Efforts will be made to discuss issues, potential problems, needed support and to exchange phone numbers and current staffing information on a regular basis. Signing efforts will be mutually updated and implemented.

H. **Coordination:**

Formal meetings will be held semi-annually in spring and fall at a minimum. The agencies will alternate hosting and provide agendas and notification for the meeting. The meeting agendas (jointly developed) may be changed under mutual consent of the agencies and additional meetings may be held to discuss specific topics. Suggested agenda topics include:

- Discuss current issues/events
- Provide relevant updates on agency activities
- Highlight a main topic/training opportunity at each meeting
- Set next meeting location, time, and date

V. PROJECT OFFICERS

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VI. MODIFICATION AND TERMINATION

This MOU agreement may be amended with consent all agencies. Amendments will be attached to this document after concurrence of the agencies.

This agreement may be terminated as mutually agreed or upon 6 months written notice by either agency.

VII. APPROVAL

This MOU shall be effective on the date all signatures are received and will be in effect for a period of five years. At that time, the MOU may be reviewed, updated, and extended for an additional five-year period.

Donald Koch — 5/14/01

Don Koch, Regional Manager — Date
Northern California - North Coast Region
California Department of Fish and Game
Redding, California

Banky Curtis — 6/17/01

Banky Curtis, Regional Manager — Date
Sacramento Valley - Central Sierra Region
California Department of Fish and Game
Rancho Cordova, California

Kathryn V. Foley — 7/6/01

Kathryn Foley, District Superintendent — Date
Northern Buttes District
Department of Parks and Recreation
Oroville, California

[signature] — 7/16/01

Kevin S. Foerster, Project Leader — Date
Sacramento National Wildlife Refuge Complex
U.S. Fish and Wildlife Service
Willows, California